

THE MINERAL INDUSTRY OF SPAIN

By Harold R. Newman

Spain occupies about 85% of the Iberian Peninsula and has some of the most mineralized territory in Western Europe. The main polymetallic deposits, from west to east, include Tharsis, Scotiel, Rio Tinto, and Aznalcollar. In terms of value of mine output of metallic and nonmetallic minerals and quarry products, Spain was one of the leading European Union (EU) countries. Consequently, the country had one of the highest levels of self-sufficiency with respect to mineral raw materials among the EU members. Spain has had a long history of base-metal mining and, although the numbers of active operations has significantly decreased in recent years, the country remained an important producer (Nations Encyclopedia, 2004§¹).

Spain, with a population of more than 42 million, had a land area of 504,782 square kilometers (km²), which included the Balearic and the Canary Islands. Spain is the second largest country in Western Europe after France. In 2004, the gross domestic product (GDP) based on purchasing power parity was \$972 billion, and the per capita income based on purchasing power parity was \$23,627. The inflation rate was 3.1%, and the unemployment rate was about 11% (International Monetary Fund, 2005§).

The Government toned down its forecast of economic growth in 2005 as high oil prices began to impact the economy. The Government forecasted a 2.7% growth in 2005 compared with 3.1% in 2004. Spain relies heavily on imported crude oil with 99% of its needs met by imports. The oil consumption in 2004 was 1.56 million barrels per day. The country was estimated to have paid about \$6.5 billion more on oil imports in 2004 owing to rising oil prices. Spain's GDP growth on average was estimated to lose one-half of a percentage point for every \$10 increase in the world oil price of a barrel of oil. The economy was bolstered somewhat by major projects planned to meet the demands of EU integration, other development projects underway in 2004, and private consumption (Alexander's Gas & Oil Connections, 2004§).

Government Policies and Programs

Legislation to abolish state and private monopolies passed in midyear 2002, and the Government continued with its program of liberalizing Spanish industries in 2004. The electricity and natural gas sectors were deregulated ahead of the schedule mandated by the EU.

Environmental Issues

Environmental regulatory bodies for Spain include the Ministerio de Agricultura (Ministry of Agriculture), the Ministerio de Medio Ambiente (Ministry of the Environment), the Ministerio de Trabajo y Asuntos Sociales (Ministry of Labor and Social Matters), and the Instituto Nacional de Seguridad e Higiene en el Trabajo (National Institute for Health and Safety at Work). Environmental issues included pollution of the Mediterranean Sea from raw sewage, effluents from the offshore production of natural gas and petroleum, water quality and quantity, and deforestation. A natural hazard in Spain was periodic droughts (U.S. Central Intelligence Agency, 2004§).

Production

Production of selected mineral commodities is listed in table 1. Primary aluminum metal production increased. With a few exceptions, mine production was lower than that of 2003. Production of mined lead and mined zinc ceased owing to closures of the Aznalcollar, the Reocin, the Rubiales, the Sotiel, and the Tharsis Mines. Mine production of silver decreased. Total refined copper production increased along with secondary lead production. Gold production also increased. Quarried mineral products, particularly quarried stone, accounted for a significant share of the mineral production in Spain. The minerals sector was of particular significance to the EU because Spain was a major producer of mercury and natural sodium sulfate, a leading producer of slate and celestite, and an important processor of raw materials (both those produced domestically and those imported). Mercury production varied according to demand and price.

Trade

Spain's international economic profile has grown appreciably in recent years. Spain was the fifth ranked economy in the EU and the world's 15th ranked exporting country. The principal export market was the EU, which accounted for almost 70% of Spain's exports and 65% of its imports (Australian Department of Foreign Affairs and Trade, 2004§).

Spain followed the U.S.-EU mutual recognition agreements in its application of nontariff regulations and conformity assessments procedures. U.S. trade with Spain for 2003, which was the latest year for which data were available, is listed in tables 3 and 4.

¹References that include a section mark (§) are found in the Internet References Cited section.

Structure of the Mineral Industry

The structure of Spain's mineral industry is listed in table 2. Minerals belong to the state under an arrangement known as the *Regalía Principal*. The Mining Law of July 21, 1973, and the Hydrocarbon Law of October 7, 1998, govern the mineral industry. The Dirección General de Política Energética y Minas (General Directorate of Energy Policy and Mines) implements these mineral laws. Sociedad Estatal de Participaciones Industriales (State Society of Industrial Participation), which is a holding company with mining as one sector in its portfolio, and the Instituto Geológico y Minero de España (Mining and Geological Institution of Spain) are the principal Government mineral-resource agencies. Also, some of Spain's Regional governments, such as those of Andalusia, Asturias, and Catalonia, have interests in the development of mineral resources in their geographic areas.

Commodity Review

Metals

Bauxite and Alumina and Aluminum.—Alumina and primary aluminum were produced almost entirely by Alcoa Inespal S.A. (a subsidiary of Alcoa Inc.). Alcoa was a holding company with two primary aluminum plants and three flat-rolled sheet and extrusions plants. Alúmina Española S.A., which was located near San Ciprian, was Alcoa's only European producer of alumina and alumina hydrates.

Alcoa announced that it would invest €64 million (\$77 million²) in technology and environmental improvements for its three smelters in northern Spain. At Aviles, Alcoa will invest €46 million (\$56 million) in improvements that would allow the plant to achieve environmental standards set by the EU to begin in 2007. Alcoa proposed €18 million (\$22 million) to be invested during the next 5 years for specific actions and projects to improve the local environment. This proposal also included the alumina refinery in San Ciprian. In addition, Alcoa was investigating methods to improve energy efficiency to reduce operating costs (Alcoa Inc., 2004\$).

Copper.—MK Gold Co. received an updated feasibility study for the development of Las Cruces, which is a high-grade copper deposit located on the eastern edge of the Iberian Pyrite Belt about 15 kilometers (km) northwest of Seville. The study envisaged using atmospheric leaching instead of autoclaving in the processing circuit. A new open pit mine was designed and a new ore reserve compiled. The ore reserves were estimated to be about 16.1 million metric tons (Mt) at an average grade of 6.53% copper. The cash operating cost of the proposed mine was expected to be about €0.33 (\$0.44) per pound of copper produced. This would place Las Cruces among the lowest cost copper producers (Mining Journal, 2004b).

Minas de Rio Tinto S.A. announced that, owing to the recovery in copper prices, it was planning to reopen the Cerro Colorado Mine, which had been closed in 1998. Minas de Rio Tinto was proceeding to open the mine as soon as possible. At its peak, Cerro Colorado produced 8 million metric tons per year (Mt/yr) of copper ore (Metal Bulletin, 2004a).

Gold.—Cambridge Mineral Resources plc of the United Kingdom was continuing with exploration drilling on the Lomero-Poyatos gold deposit in the Iberian Pyrite Belt in southern Spain. The deposit was reported to contain estimated indicated and inferred resources of about 20.6 Mt at a mean grade of 3.1 grams per metric ton (g/t) gold, 70 g/t silver, and 3.3% zinc (Cambridge Mineral Resources plc, 2004b\$).

Cambridge was also continuing exploration of the San Telmo concession, which lies contiguously along strike to the Lomero-Poyatos deposit. San Telmo comprised 34 concessions, which included the Santa Barbara Mine and several mineralized zones that covered approximately 12.5 km². Surface sampling at the Carpio target returned assays from outcrops and float samples that ranged from 3.7 to 9.3 g/t gold. Other prospects at San Telmo were being evaluated and included an area of interest where historic drill information indicated both copper and gold mineralization (Cambridge Mineral Resources plc, 2004a\$).

Rio Narcea Gold Mines Ltd. (RNG) received a resource estimate from Roscoe Postle Associates Inc. for its Salave gold deposit in northern Spain. The estimate comprised measured resources of 354,000 metric tons (t) at a grade of 2.7 g/t gold, indicated resources of 14.8 Mt at a grade of 3.0 g/t gold, and inferred resources of 2.8 Mt at a grade of 2.47 g/t gold, using a 1 g/t gold cutoff grade. Salave was described by RNG as an intrusive-related disseminated gold deposit hosted in granodiorite with mineralization that occurs in subhorizontal to gently dipping irregular lenses within an area that measures 350 meters (m) long by 300 m wide and extends to a depth of 350 m (Mining Journal, 2004c).

Ormonde Mining plc of Ireland had a productive year in project acquisition and exploration activities in 2004. These activities culminated in the acquisition of two major advanced projects (the La Zarza gold-copper project and the Salamanca gold project), the upgrading and reconsolidation of the Tracia gold project, and the completion of drilling programs on the Salamon and the Trives gold projects. The La Zarza project contained two substantial inferred mineral resources: a gold resource of 5.9 Mt at a grade of 5.0 g/t gold and 50 g/t silver, and a 2.9 Mt copper resource at a grade of 2.8% copper. Ormonde considered that there was potential to increase the size of the resources as they were largely open along strike and at depth (Ormonde Mining plc, 2004\$).

Iron and Steel.—Compañía Española de Laminación S.L. (Celsa) produced about 1.6 Mt/yr of steel. Celsa was operating a new electric furnace with a capacity of 140 t and two continuous-casting machines, one of which had a square section and the other, a blank-beam section. Another furnace was inaugurated in December 2004. The company hoped these improvements would make it possible to achieve a production level of 2 Mt/yr. Heat lamination of billets was carried out in three mills, each with its own specifications: one mill was for corrugated round rods and rolls; another, for flat bars, squares, rods round and angular, and light sections; and the third mill, for thick structural sections (Compañía Española de Laminación S.L., 2004\$).

²Where necessary, values have been converted from EU euros (€) to U.S. dollars (\$) at the rate of €1.00 = US\$1.20.

Alcan announced that it had reached agreement on the terms of sale of Pechiney Électrométallurgie to Ferroatlántica S.L., which was Spain's leading ferroalloy producer. The value of this transaction was expected to generate €120 million (\$183 million). The sale would be subject to regulatory and union approvals. Alcan stated that the agreement was consistent with its strategy of focusing on aluminum and divesting noncore activities (Alcan Inc., 2004§).

Mercury.—Minas de Almadén y Arrayanes S.A. at Almadén was a leading producer of liquid mercury metal. Almadén is located about 200 km south of Madrid in the Province of Ciudad Real in the Brown Mountain range.

In midyear, Almadén restarted production after a 4-month shutdown to install a new gas cleaning system. The shutdown was reported to have contributed to a rise in prices. Of the three major producers, none made much material available, so the price of mercury went up. Almadén's resumption of production was expected to reduce the mercury market's tightness (Metal Bulletin, 2004b).

Nickel.—Flor Corp. completed construction on RNG's nickel plant in southwestern Spain. The plant processed its first output in December from RNG's Aguablanca Mine. The nickel sulfide flotation plant was designed to treat 1.5 Mt/yr of ore and produce a bulk copper-nickel-platinum-group metals concentrate. The open pit mine was expected to produce 8,200 metric tons per year (t/yr) of nickel and to have an estimated mine life of 10.5 years based on the estimated mine reserves (Rio Narcea Gold Mines Ltd., 2005§).

Tin.—Goldtech Mining Corp. of the United States in a joint venture with Solid Resources Ltd. of Canada announced plans to explore further and develop its 5,000 hectare Goldpejas property near Salamanca. The property had produced tin and minor amounts of tantalum in the 1970s but closed in the early 1980s when the price of tin collapsed. Goldtech expected that 3.5 Mt of tin ore was recoverable, and a drilling program was started in late 2004 to determine the mining plan. Tantalum and some rare-earth metals were associated with the deposit (Metal Bulletin Monthly, 2004).

Zinc.—Zinc suppliers in Europe were preparing to raise premiums on annual supply contracts for 2005 as the scarcity of concentrates continued to squeeze physical supplies of the metal, which was used mainly by the galvanizing industry. The increase in premiums was largely driven by supply rather than demand. The zinc suppliers estimated that the global zinc market would be in deficit in 2005, with the shortage of concentrates pushing zinc metal production lower (Metal Bulletin, 2004c).

Asturiana de Zinc S.A. continued production at its San Juan de Nieva Castrilló plant with a capacity of 480,000 t/yr. Asturiana's core business was the refining and production of zinc metal. The Reocin Mine, which had been a zinc mining location, was closed on March 31, 2003, owing to exhausted mineral reserves. The closure process continued in collaboration with national and regional authorities and all closure activities were being completed as planned (Asturiana de Zinc S.A., 2004§).

Española del Zinc was seeking voluntary bankruptcy after failing to reach an agreement with its major creditors on rescheduling debt repayments. Española stated that the proposed debt restructuring was central to its financial recovery plan, which involved raising €35 million (\$42 million) in the short term through new loans and capital raisings (Mining Journal, 2004a).

Industrial Minerals

Each year, Spain produces about 650 Mt of industrial minerals and rocks worth €4,700 million (\$5,690 million). In 2004, this amount represented more than 80% of the national mining production. Spain was the leading producer of gypsum in Europe, the sole European producer of sodium sulfate, the second ranked producer of celestite after Mexico, and the third ranked producer of dimension stone after China and Italy. The country had the largest feldspathic sand reserves in Europe and 70% of global reserves of sepiolite (Industrial Minerals, 2004b).

Barite.—Minerales y Productos Derivados S.A. (Minersa) was a main supplier of drilling-grade material. Minersa operated a surface mine and a plant at Vera. More than one-half of the material produced was API grade that was exported. The rest went to the nondrilling domestic markets, such as heavy concrete and sound deadening (Industrial Minerals, 2004e).

Fluorspar.—Minersa was Europe's leading fluorspar producer because of its three deposits in Asturias, northern Spain. The Emilio, the Jaimina, and the Moscona underground mines produced about 420,000 t/yr of crude fluorspar. Minersa's production capacity for concentrate was 150,000 t/yr. Most of the production was acid-grade fluorspar, but some metallurgical- and ceramic-grade fluorspar was also produced (Industrial Minerals, 2004a).

Magnesite.—Magnesitas Navarras S.A. (MAGNA) mined an open pit deposit of interstratified magnesite with dolomite lenses and slate layers at Eugui. Resources were estimated to be 20 Mt. MAGNA's mining and industrial process was to consist of three phases. During Phase one, 1.7 Mt of material would be mined, from which 515,000 t of usable material would be recovered. In Phase two, magnesium carbonate would be concentrated to produce about 450,000 t. In Phase three, 450,000 t of magnesium carbonate would be burned to produce about 170,000 t of dead burned magnesium oxide (Industrial Minerals, 2004c).

Potash.—Iberpotash S.A. was a 100% owned subsidiary of Dead Sea Works Ltd. (DSW), which was the world's fourth ranked producer of potash and an important source of potash in Western Europe. Iberpotash mined sylvinite and sylvite ore from the Cataluna deposit in the Suria area and increased production to 656,000 t/yr (Industrial Minerals, 2004d).

Sepiolite.—Spain maintained its world leadership in sepiolite production and held 70% of the world's reserves, which are located in the Tagus Basin. The largest deposit was thought to be in excess of 15 Mt (Grupo Tolsa, 2004§).

Mineral Fuels

Spain was a country with a strong dependency on external sources of energy—no oilfields or natural gas fields are located onshore or offshore, and the coal mines consisted mainly of low-quality coal. Reserves of petroleum were estimated to be 158 million barrels; that of natural gas, 72 million cubic meters; and that of coal, 655 Mt (U.S. Energy Information Administration, 2005§).

Output of natural gas and petroleum remained about the same as that of 2004. Spain's production of crude oil was limited, and the country continued to be a large importer of mineral fuels. Spain imported about 99% of its crude oil mainly from Russia, 15%; Mexico, 14.7%; Saudi Arabia, 12.7%; and Libya, 12.2%. Almost all of Spain's natural gas production came from one offshore field, Poseidon, which was operated by Repsol-YPF. The country imported 60% of its natural gas from Algeria (U.S. Energy Information Administration, 2005§).

Spain had the fifth ranked electricity market in the EU. The country produced 229 billion kilowatthours (kWh) and consumed 218.4 billion kWh. The largest share of electricity generation came from conventional thermal plants, 52.3%, hydroelectricity, 25.2%, nuclear, 14.9%, and other renewables, 7.6%. Electricity consumption has grown considerably and has strained the electricity infrastructure, with several major blackouts attributed to supply shortages or transmission grid malfunction (U.S. Energy Information Administration, 2005§).

Coal.—Coal reserves were abundant but difficult to mine. Consequently, the cost of production was high, which made Spanish coal less competitive than that of many other countries. Spain's attempts to modernize and restructure its coal industry has resulted in a decline in production and has not led to decreased production costs. The leading producer of bituminous coal was Hulleras del Norte S.A., and the leading producer of lignite was Empresa Nacional de Electricidad S.A. (International Energy Agency, 2005§).

Renewable Energy.—Spain was the world's second ranked producer of wind power after Germany, with the energy source meeting 6% of Spain's total electricity demand. Spain had 8300 MW of installed wind capacity and an additional 57,000 MW in various stages of planning, development, and regulatory approval (International Energy Agency, 2005§).

Outlook

The Government was expected to continue with its privatization and liberalization efforts. The economy will continue to be affected by the demands of EU integration and will grow modestly. About 80% of Spain's mining production is industrial minerals and rocks. This is expected to continue. The country will continue to have a strong dependence on external sources of energy. Production of coal could eventually be phased out despite EU subsidies to maintain production. More attention will be directed toward renewable energy.

References Cited

- Industrial Minerals, 2004a, Spain—Fluospar: Industrial Minerals, January, p. 37.
Industrial Minerals, 2004b, Spain's industrial minerals: Industrial Minerals, June, p. 28.
Industrial Minerals, 2004c, Spain—Magnesite: Industrial Minerals, January, p. 37.
Industrial Minerals, 2004d, Spain—Potash: Industrial Minerals, January, p. 37.
Industrial Minerals, 2004e, Top flight filler: Industrial Minerals, February, p. 26.
Metal Bulletin, 2004a, Cerro Colorado to reopen: Metal Bulletin, no. 8856, August 23, p. 11.
Metal Bulletin, 2004b, Mercury producer restarts but tightness remains: Metal Bulletin, no. 8827, February 2, p. 16.
Metal Bulletin, 2004c, Tight concentrates market to raise annual zinc premium: Metal Bulletin, no. 8863, October 11, p. 26.
Metal Bulletin Monthly, 2004, Drilling commences on Goldpejas concession in Spain: Metal Bulletin Monthly, no. 406, October, p. 19.
Mining Journal, 2004a, Espanola del Zinc's woes: Mining Journal, February 4, p. 13.
Mining Journal, 2004b, Las Cruces update: Mining Journal, February 13, p. 8.
Mining Journal, 2004c, Rio Narcea receives Salave estimate: Mining Journal, November 12, p. 9.

Internet References Cited

- Alcan Inc., 2004 (December 30), Alcan reaches agreement on sale of its ferroalloy division, accessed March 23, 2005, at URL <http://www.alcan.com/web/publishing.nsf>.
Alcoa Inc., 2004 (October 27), Alcoa invests 64 million euros in environment and technology in Spanish smelters, accessed October 25, 2005, at URL http://www.alcoa.com/global/en/news/news_printable.asp.
Alexander's Gas & Oil Connections, 2004 (November 11), Spain modifies growth forecast citing high oil prices, accessed December 15, 2004, at URL <http://www.gasandoil.com/goc/news/nte44567.htm>.
Asturiana de Zinc S.A., 2004, Company overview, accessed October 28, 2005, at URL <http://www.food-business-review.com/companyprofile.asp>.
Australian Department of Foreign Affairs and Trade, 2004 (June), Spain, Country Brief, accessed January 5, 2005, at URL http://www.dfat.gov.au/geo/spain/spain_brief.html.
Cambridge Mineral Resources plc, 2004a (May 29), Lomero-Poyatos drilling and exploration update, accessed December 6, 2004, at URL <http://www.cambmin.co.uk/newspages/drilling20Update.htm>.
Cambridge Mineral Resources plc, 2004b (November 26), Positive gold assays returned from San Telmo project, accessed January 6, 2005, at URL <http://www.cambmin.co.uk/newspages/San20Telmo20Update.htm>.
Compañía Española de Laminación, S.L., 2004, Quality and service—Our commitment, accessed October 28, 2005, at URL <http://www.celsa.com/EN/zonapublica/empresa.aspx>.
Grupo Tolsa, 2004, Raw materials, accessed March 14, 2006, at URL <http://www.tolsa.com/ing/index.htm>.
International Energy Agency, 2005, Spain, Chapter 19, accessed March 14, 2006, at URL http://www.ieawind.org/iea_wind_pdf.
International Monetary Fund, 2005 (April), Report for selected countries—Spain, accessed October 18, 2005, at URL <http://www.imf.org/external/pubs/ft/weo/2004/01/data/dbc/outm.cfm>.
Nations Encyclopedia, 2004, Spain—Mining, accessed March 13, 2006, at URL <http://www.nationsencyclopedia.com/europa/spain-MINING.html>.
Ormonde Mining plc, 2004 (December), Major gold-copper resources, accessed January 10, 2005, at URL http://www.ormondemining.com/pr040701_LaZarza.htm.
Rio Narcea Gold Mines Ltd., 2005 (January 12), Nickel operations, accessed January 12, 2005, at URL <http://www.rionarcea.com/s/Aguablanca.asp>.
U.S. Central Intelligence Agency, 2004, Spain, World Factbook 2004, accessed December 14, 2004, at URL <http://www.cia.gov/cia/publications/factbook/geos/sp.html>.
U.S. Energy Information Administration, 2005 (March), Spain, Country Analysis Brief, accessed March 22, 2005, at URL <http://www.eia.doe.gov/emeu/cabs/spain.html>.

Major Sources of Information

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TABLE 1
SPAIN: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity	2000	2001	2002	2003 ^c	2004 ^c
METALS					
Aluminum:					
Alumina ^{c, 2}	1,200,000	1,100,000	1,000,000	1,000,000	1,000,000
Metal:					
Primary	365,700	376,400	380,100	389,100 ³	397,500 ³
Secondary	240,520	221,720	242,600	245,000 ³	245,000 ³
Total	606,220	598,120	622,700	634,100 ³	642,500 ³
Copper:					
Mine output, Cu content	23,312	9,748	1,248	643	1,448 ³
Metal:					
Blister:					
Primary	258,600	255,200	281,300	280,000	210,200 ³
Secondary	31,300 ^c	24,700	16,700	20,000	14,100 ³
Total	289,900	279,900	298,000	300,000	224,300 ³
Refined:					
Primary	258,000	235,100	271,500	276,300 ^{r, 3}	208,241 ³
Secondary	58,000 ^c	55,600	36,700	14,000 ^r	35,000 ³
Total	316,000	290,700	308,200	290,300 ^{r, 3}	243,241 ³
Germanium oxide, Ge content ^c	kilograms	6,000	5,000	5,000	5,000
Gold, mine output, Au content	do.	4,310	3,720	5,362 ³	5,600
Iron and steel, metal:					
Pig iron	thousand metric tons	4,059	4,094	3,978	4,000
Ferroalloys, electric furnace	do.	180	180 ^c	175	175
Of which ferrochromium, crushed ^c		950 ³	--	--	--
Steel:					
Crude	thousand metric tons	15,844	15,834	16,358	16,287 ^{r, 3}
Hot rolled	do.	14,599	14,931	15,000 ^c	14,000
Lead:					
Mine output, Pb content		40,300	36,000	6,171	1,765 ³
Metal, secondary ^c		120,000	121,600 ³	116,000	99,100 ³
Mercury, mine output, Hg content		237	524	727	500
Nickel, Ni content of concentrate		--	--	--	(4)
Silver, mine output, Ag content	kilograms	114,537	54,836	3,409	2,246 ³
Tin, mine output, Sn content ^c		1,091	425	267	247 ³
Uranium, mine output:					
U content		294	353	315	170
U ₃ O ₈ content		347	416	372	200 ^r
Zinc:					
Mine output, Zn content		200,021	164,900	69,926	15,100 ^r
Metal, primary and secondary		387,100	436,800 ^r	502,400 ^r	519,900 ^{r, 3}
INDUSTRIAL MINERALS					
Barite, BaSO ₄		28,796	50,640	52,494	44,660 ^{r, 3}
Calcium cabonate ^c		2,000	2,000	2,000	2,100
Cement, hydraulic, other than natural	thousand metric tons	38,154	40,512	42,417	44,000
Clays:					
Attapulgit		28,307	24,477	22,918	18,975 ³
Bentonite		90,152	100,000 ^r	123,457	103,174 ³
Kaolin, washed		353,355	440,000 ^r	419,483	450,000
Other ^c	thousand metric tons	15,000	15,000	15,000	15,000
Diatomite and tripoli		64,616	66,433	53,558	52,700
Feldspar		492,028	514,285	538,407	600,000
Fluorspar, CaF ₂ content:					
Acid-grade		132,690	126,535	131,155	129,195 ³
Metallurgical-grade		7,776	7,504	10,279	10,503 ³
Total		140,466	134,039	141,434	139,698 ³
Gypsum and anhydrite, crude	thousand metric tons	9,929	11,901	11,218	11,500 ^{r, 3}

See footnotes at end of table.

TABLE 1--Continued
SPAIN: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity	2000	2001	2002	2003 ^c	2004 ^c
INDUSTRIAL MINERALS--Continued					
Lime, hydrated and quicklime ^c thousand metric tons	1,700	1,700	1,800	1,800	1,800
Magnesite, calcined	160,000	156,000	150,000 ^e	150,000	150,000
Mica	10,086	10,000 ^e	11,786	11,800	12,000
Nitrogen, N content of ammonia thousand metric tons	442	436	415	432 ³	404
Pigment, mineral:					
Ocher	87,000	126,000	140,000	174,153 ³	160,000
Red iron oxide ^c	10,000	5,000	4,500	5,404 ³	5,000
Potash, K ₂ O equivalent	646,294	569,127	481,329	594,355 ³	590,000
Pumice	761,540	857,223	701,528	711,898 ³	710,000
Pyrite, including cuprous, gross weight thousand metric tons	205	152	100 ^e	--	--
Salt:					
Rock, including byproduct from potash works do.	2,328	2,200	2,560 ^e	2,563 ³	2,600
Marine and other do.	1,541	1,500	1,334	1,400	1,400
Sand and gravel, silica sand ⁵ do.	86,321	95,000 ^e	95,768	105,000	100,000
Sepiolite, meerschäum	794,114	896,983	733,134	690,395 ³	700,000
Sodium compounds, n.e.s.: ^c					
Soda ash, manufactured thousand metric tons	500	500	500	500	500
Sulfate, natural:					
Glauberite, Na ₂ SO ₄ content	669,256 ³	705,000	754,945 ³	815,560 ³	800,000
Thenardite, Na ₂ SO ₄ content	167,800 ³	168,000	160,000	200,000	200,000
Manufactured	125,000	125,000	125,000	125,000	125,000
Stone:					
Chalk ^c thousand metric tons	889 ³	980	876	920	900
Dolomite do.	8,752	9,628	11,537	12,000	12,000
Limestone ^c do.	240,000	250,000	236,411 ³	248,000	240,000
Marble, ornamental do.	3,687	3,941	5,230	5,000	5,000
Marl do.	9,966	10,495	10,000 ^e	10,000	10,000
Basalt do.	3,044	3,348	3,400 ^e	3,400	3,400
Granite, ornamental ^c do.	1,188 ³	1,200	1,200	1,412 ³	1,400
Ophite do.	2,579	2,840	2,800 ^e	2,800	2,800
Phonolite do.	1,479	1,630	1,761	2,000	2,000
Porphyry do.	2,159	2,483	1,971	2,100	2,100
Quartz do.	1,961	2,150	2,000 ^e	2,000	2,000
Quartzite do.	2,131	2,150	2,784	2,900	3,000
Sandstone do.	2,318	2,430	2,246	2,400	2,400
Other do.	794	897	900 ^e	900	900
Slate do.	751	790 ^e	828 ^r	837 ³	840
Other ^c do.	1,000	1,000	1,000	1,000	1,000
Strontium minerals, Sr ₂ O ₄ content	148,352	143,320	171,293	152,383 ³	150,000
Sulfur:					
S content of pyrites thousand metric tons	94	90	--	--	--
Byproduct: ^c					
Metallurgy do.	454	461	544	500	500
Petroleum do.	115	135	140	150	150
Coal (lignite) gasification do.	1	1	1	1	1
Total do.	664	687	685	651	651
Talc and steatite ^c	114,654 ³	115,000	115,000	115,000	115,000
MINERAL FUELS AND RELATED MATERIALS					
Coal, marketable:					
Anthracite thousand metric tons	5,144 ^r	4,694	4,393	3,863 ³	3,800
Bituminous do.	6,173	5,797	5,383	5,531 ³	5,500
Lignite, black and brown do.	12,153	12,193	8,762	7,981 ³	8,000
Total do.	23,470 ^r	22,684	18,538	17,375 ³	17,300
Coke, metallurgical do.	2,470	2,400 ^e	2,628	2,500	2,500
Gas, natural, marketed thousand cubic meters	179,293	556,650	553,156	550,000	550,000

See footnotes at end of table.

TABLE 1--Continued
 SPAIN: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity	2000	2001	2002	2003 ^e	2004 ^e
MINERAL FUELS AND RELATED MATERIALS--Continued					
Peat ^e	50,000	50,000	55,302 ³	55,000	55,000
Petroleum:					
Crude thousand 42-gallon barrels	1,648	2,505	2,427	2,404 ³	2,400
Refinery products: ^e					
Liquefied petroleum gas do.	36,000	36,000	35,164 ³	33,234 ³	35,000
Naphtha do.	25,000	25,000	26,069 ³	25,000	25,000
Gasoline, motor do.	85,000	85,000	74,035 ³	85,000	85,000
Jet fuel do.	30,000	30,000	28,944 ³	24,456 ³	25,000
Kerosene do.	16,000	16,000	15,965 ³	15,942 ³	16,000
Distillate fuel oil do.	150,000	150,000	149,759 ³	111,676 ³	112,000
Residual fuel oil do.	85,000	85,000	68,085 ³	60,353 ³	60,000
Other do.	38,000	38,000	38,000	38,000	38,000
Refinery fuel and losses do.	10,000	10,000	10,000	10,000	10,000
Total do.	475,000	475,000	446,000	404,000	406,000

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. -- Zero.

¹Table includes data available through October 2005.

²Reflects aluminum hydrate.

³Reported figure.

⁴The Aguablanca operation of Rio Narcea Gold Mines Ltd. was commissioned in December 2004.

⁵Includes sand obtained as a byproduct of feldspar and kaolin production.

TABLE 2
SPAIN: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Alúmina Española S.A. (Alcoa Inc.)	Alumina plant at San Ciprian, Lugo	1,000
Aluminum	do.	Electrolytic plant at San Ciprian, Lugo	230
Do.	Alcoa Inespal S.A. (Alcoa Inc.)	Electrolytic plant at Aviles	85
Do.	do.	Electrolytic plant at La Coruña	85
Coal:			
Anthracite	Antracitas Gaiztarro S.A.	Mines at María and Paulina	2,000
Do.	do.	Mines near Oviedo	2,000
Do.	Antracitas del Bierzo S.A.	Mines near Leon	1,000
Bituminous	Hulleras del Norte S.A. (Hunosa)	Various mines and plant	3,300
Do.	Hulleras Vasco Leonesa S.A.	Santa Lucia Mine, Leon	2,000
Do.	Minas de Figaredo S.A.	Mines near Oviedo	1,000
Do.	Nacional de Carbon del Sur (Encasur)	Rampa 3 and San Jose Mines, Cordoba	200
Lignite	Empresa Nacional de Electricidad S.A. (Endesa)	As Pontes Mine, and Andorra Mine, La Coruña	15,000
Barite	Minerales y Productos Derivados S.A.	Mine and plant at Vera, Almeria	100
Bentonite	Süd-Chemi España SL	Mine and plant at Yuncos, Toledo	150
Cement	Ashland S.A.	Puerto de Sagunton, Valencia	2,000
Do.	do.	Villaluenga de la Sagra, Toledo	2,000
Do.	do.	3 other plants	2,000
Do.	35 other companies	49 other plants	38,000
Total			44,000
Copper:			
Metal	Atlantic Copper S.A. (Freeport MacMoRan Copper & Gold Inc., 100%)	Refinery at Huelva	270
Do.	do.	Electrolytic refinery at Huelva	105
Do.	Industrias Reunidas de Cobre	Smelter at Asua-Bilbao	30
Do.	Elmet SL	Smelter and electrolytic refinery at Berango, Vizcaya	60
Ore, metal	Atlantic Copper S.A. (Freeport MacMoRan Copper & Gold Inc., 100%)	Mines and plant at Ariertero near Santiago de Compostela	12
Do.	do.	Alfredo underground mine in Rio Tinto area	30
Do.	Minas de Rio Tinto S.A.	Cero Colorado open pit mine	20
Dunite	Pasek España S.A.	Mines and plant at Landoy, Ortigueira	1,500
Fluorspar, ore	Minerales y Productos Derivados S.A.	Plant at Torre, Asturias	150
Do.	do.	Underground mines at Emilio, Jaimina, and Moscona, Asturias	420
Gold kilograms	Rio Narcea Gold Mines, Ltd.	El Valle and Carles mines, Asturias	3,750
Lead:			
Metal	Española del Zinc S.A.	Refinery at Cartagena, Murcia	50
Do.	Compañía La Cruz, Minas y Fundaciones de Plomo S.A.	Smelter at Lineares, Jaen	40
Do.	do.	Refinery at Lineares, Jaen	40
Do.	Tudor S.A.	Secondary smelter at Saragoza	16
Do.	Ferroaleaciones Españolas, S.A.	Secondary smelter at Medina del Campo	12
Do.	Derivados de Minerales y Metales	Secondary smelter at Barcelona	5
Ore	Sociedad Minera y Metalúrgica de Peñarroya de España S.A. (Peñarroya, France, 90%)	Opencast mine at Montos de Los Azules	25
Do.	Andaluz de Piritas S.A.	Mine at Aznalcollar (closed 2001)	21
Do.	Exploración Minera International España S.A. (EXMINESA)	Underground mine at Rubiales, Lugo	16
Magnesite	Magnesitas Navarras S.A.	Mine at Eugui, plant at Zubiri	600
Do.	Magnesitas de Rubián S.A.	Plant at Monte Castel	70
Mercury flasks	Minas de Almadén y Arrayanes S.A., (Government, 100%)	Mines and smelter at Almaden	70,000
Nickel, metal	Rio Narcea Gold Mines, Ltd.	Aguablanca Mine, Extremadura	8

TABLE 2--Continued
SPAIN: STRUCTURE OF THE MINERAL INDUSTRY IN 2004

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum:				
Crude	42-gallon barrels per day	Chevron S.A.	Oilfield at Casablanca	300
Refined	do.	Repsol-YPF S.A.	Refinery at Escombreras	200,000
Do.	do.	do.	Refinery at Puertollano	14,000
Do.	do.	do.	Refinery at Tarragona	260,000
Do.	do.	Refinería de Petróleos del Norte S.A. (Petronor)	Refinery at Somorrostro	240,000
Do.	do.	Compañía Española de Petróleos S.A. (Cepsa)	Refinery at Santa Cruz de Tenerife	160,000
Do.	do.	Petroleos del Mediterraneo S.A. (Petromed)	Refinery at Castellón de la Plana	120,000
Do.	do.	Compañía Iberica Refinadora de Petróleos S.A. (Petroiber)	Refinery at La Coruña	140,000
Potash, ore		Iberpotash S.A. (Dead Sea Works Ltd., 60%; La Seda S.A., 20%; Tolsa S.A., 20%)	Mines and plants at Suria near Barcelona	850
Pyrite		Compañía Española de Mines de Tharsis	Mines and plants at Tharsis and Zarza near Seville	1,300
Do.		do.	Plant at Huelva	600
Do.		Rio Tinto Minera S.A. (Rio Tinto plc, 75%, and Rio Tinto Zinc, 25%)	Mines and plant at Rio Tinto (closed 2001)	900
Sepiolite		Tolsa S.A.	Mine and plant at Vicalvaro near Madrid	100
Do.		Silicatos-Anglo-Ingleses S.A.	Mine and plant at Villecas near Madrid	200
Sodium sulfate		Crimidesa S.A.	Mine and plant at Cerezo de Rio, Burgos	600
Steel		Aceralia Corporación Siderúrgica (Arbed S.A., 35%)	Plants at Aviles, Gijon, Sagunto, and Sestao	8,000
Do.		Cia Espanola de Laminacion SL (Celsa Group, 100%)	Plant at Barcelona	1,600
Strontium		Solvay Minerales S.A.	Mines and plant at Escuzar, Granada	85
Do.		Bruno S.A.	Mine and plant at Montevives, Granada	50
Uranium, U ₃ O ₈	metric tons	Empresa Nacional del Uranio (Enusa) (Government, 100%)	Mines and plant near Ciudad Real	500
Zinc:				
Metal		Asturiana de Zinc S.A. (Azsa) (Xstrata plc, 100%)	Electrolytic zinc plant at San Juan de Nieva Castillon	480
Do.		Española del Zinc S.A.	Electrolytic plant at Cartagena	50
Ore		Asturiana de Zinc S.A. (Xstrata plc, 100%)	Reocin mines and plants (closed 2003)	500
Do.		Exploración Minera Internacional España S.A. (EXMINESA)	Underground mine at Rubiales, Lugo	500
Do.		Sociedad Minera y Metalúrgica de Penarroya-Espana S.A.	Mines and plants at Montos de los Azules y Sierra de Lujar, San Agustin	200

TABLE 3
SPAIN: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals		3,642	--	Mexico 2,625; Portugal 835; unspecified 179.
Alkaline-earth metals		63,459	--	France 43,839; Portugal 12,250; Netherlands 7,000.
Unspecified		67,101	--	France 43,839; Portugal 13,085; Netherlands 7,000.
Aluminum:				
Ore and concentrate		2,780,092	--	Portugal 1,910,937; Italy 665,562; Tunisia 180,640.
Oxides and hydroxides		602,943,278	4,500	Netherlands 301,877,925; Italy 71,716,530; Norway 60,052,269.
Ash and residue that contain aluminum		2,159,215	108,046	Egypt 48,000; Malaysia 42,000; Iran 21,000.
Metal, including alloys:				
Scrap		41,505,625	166,921	Portugal 12,801,300; China 11,972,566; Germany 4,691,761.
Unwrought		89,850,877	--	Italy 26,438,561; Portugal 21,982,558; France 21,147,632.
Semimanufactures	metric tons	233,832	2,900	France 51,687; Germany 46,887; United Kingdom 25,515.
Antimony:				
Ore and concentrate		1,500	--	All to Brazil.
Oxides		622,458	--	Italy 516,250; Portugal 23,300; Netherlands 22,500.
Metal, including alloys, all forms		39,523	--	Morocco 24,898; Hungary 10,250; Portugal 4,375.
Arsenic, metal, including alloys, all forms		1	--	All unspecified.
Bismuth, metal, including alloys, all forms		10,075	3,937	Brazil 1,437; Portugal 894; unspecified Asia 1,500.
Cadmium, metal, including alloys, all forms		335	--	China 324; Portugal 8; unspecified 3.
Chromium:				
Ore and concentrate		955,266	1	Portugal 903,312; Italy 30,453; Mexico 20,000.
Oxides and hydroxides		910,902	76,000	Italy 230,034; France 139,300; Germany 77,000.
Metal, including alloys, all forms		1,125,756	91,933	France 562,640; Germany 71,823; unspecified Asia 238,699.
Cobalt:				
Ore and concentrate		78,064	55,941	Brazil 21,089; Argentina 1,000; unspecified 34.
Oxides and hydroxides		7,572	--	United Kingdom 3,187; Italy 2,687; Egypt 1,000.
Metal, including alloys, all forms		14,185	--	United Kingdom 6,375; Portugal 2,810; Belgium 2,382.
Columbium and tantalum, metal, including all forms, tantalum				
		5,312	--	All to France.
Copper:				
Ore and concentrate		2,586,809	--	Canada 2,522,250; China 63,953; Italy 500.
Matte and speiss, including cement copper		1	--	All to France.
Oxides and hydroxides		56,911	--	Italy 47,250; Portugal 5,812; Australia 1,500.
Sulfate		2,933,438	--	Portugal 976,437; France 730,375; Greece 549,000.
Ash and residue that contain copper		100,049	--	Japan 43,085; Mexico 37,152; Belgium 19,812.
Metal, including alloys:				
Scrap		64,522,761	669,437	Italy 16,650,921; Germany 15,963,089; France 8,431,816.
Unwrought		94,327,534	2,749	Belgium 39,938,058; France 10,880,162; Egypt 8,968,675.
Semimanufactures		158,247,749	3,323,785	Italy 53,735,510; Portugal 45,087,379; France 22,558,930.
Gold:				
Waste and sweepings		874	--	Belgium 860; United Kingdom 14.
Metal, including alloys, unwrought and partly wrought	value, thousands	\$92,329	--	Switzerland \$38,595; Portugal \$36,723; France \$8,921.
Iron and steel:				
Iron ore and concentrate:				
Including roasted pyrite		100,244,266	--	Greece 71,889,187; Croatia 14,098,378; Israel 7,520,398.
Excluding roasted pyrite		103,366	--	Norway 100,609; China 250; unspecified 2,507.
Roasted pyrite		100,140,900	--	Greece 71,889,187; Croatia 14,098,378; Israel 7,520,398.
Metal:				
Scrap	metric tons	108,216	99	Portugal 38,736; United Kingdom 23,842; France 18,548.
Pig iron, cast iron, related materials		7,127,577	23,155	Portugal 2,639,249; Gibraltar 999,687; Germany 641,784.

See footnotes at end of table.

TABLE 3--Continued
SPAIN: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
METALS--Continued			
Iron and steel--Continued:			
Metal--Continued:			
Ferroalloys:			
Ferrochromium	396,926	--	Portugal 395,827; France 589; Belgium 460.
Ferromanganese metric tons	62,098	36	Italy 21,230; Germany 19,007; United Kingdom 9,300.
Ferromolybdenum	351,491	--	Italy 313,250; Portugal 38,214; unspecified 27.
Ferronickel	47,195	--	All to Germany.
Ferrosilicon	46,388,707	5,500,000	Portugal 12,715,136; France 12,592,605; Finland 4,567,847.
Ferrotitanium and ferrosilicotitanium	55,718	--	Brazil 31,246; Egypt 22,972; Portugal 1,500.
Ferrotungsten and ferrosilicotungsten	78,097	--	All to Portugal.
Ferrovanadium	194,819	--	Portugal 161,429; Netherlands 16,140; France 12,000.
Ferroniobium	1,956	--	Portugal 1,312; Italy 644.
Silicon metal	10,226,770	--	United Kingdom 5,622,558; Germany 1,698,187; Italy 1,274,000.
Unspecified metric tons	133,102	5,536	Germany 27,279; Italy 26,124; United Kingdom 19,003.
Steel, primary forms	179,681,520	27,406,042	Italy 49,988,630; Japan 31,711,636; China 27,999,593.
Semimanufactures:			
Flat-rolled products:			
Of iron or nonalloy steel:			
Not clad, plated, coated	844,733,137	6,687	France 176,607,242; China 146,762,235; Portugal 129,837,779.
Clad, plated, coated	643,621,502	1,664,076	France 204,666,592; Italy 101,895,937; Portugal 101,004,156.
Of alloy steel	566,773,916	974,384	Italy 90,645,739; Germany 86,248,641; France 63,941,570.
Bars, rods, angles, shapes, sections metric tons	3,346,364	199,876	Portugal 544,199; France 419,992; United Kingdom 340,554.
Rails and accessories	117,665,260	3,149,831	Colombia 20,827,323; Brazil 18,391,768; Thailand 17,703,035.
Wire	213,623,659	7,356,073	France 73,588,548; Portugal 27,127,786; Germany 21,444,330.
Tubes, pipes, fittings	641,493,553	49,106,353	France 179,226,598; Portugal 94,662,002; Germany 69,944,760.
Lead:			
Ore and concentrate	5,057,393	--	China 5,000,000; Algeria 37,382; Morocco 20,000.
Oxides	2,138,707	--	Portugal 552,261; Morocco 330,050; United Kingdom 258,659.
Ash and residue that contain lead	20	--	Unspecified 20.
Metal, including alloys:			
Scrap	7,163,017	--	France 6,416,769; Israel 537,187; Portugal 167,933.
Unwrought	5,910,390	--	Portugal 2,358,874; France 2,150,937; Germany 717,702.
Semimanufactures	748,955	1,125	Netherlands 193,148; Belgium 192,039; France 151,991.
Lithium, oxides and hydroxides	7,354	--	Saudi Arabia 6,625; France 500; Portugal 199.
Magnesium, metal, including alloys:			
Scrap	1,946,125	--	All to Norway.
Unwrought	180,564	46,535	Mexico 86,769; Norway 42,761; Portugal 3,062.
Semimanufactures	164,533	--	Portugal 156,597; France 3,625; Mexico 3,000.
Unspecified	2,291,222	46,535	Norway 1,988,886; Portugal 159,659; Mexico 89,769.
Manganese:			
Ore and concentrate	790,375	--	United Kingdom 257,625; Netherlands 188,839; Italy 188,238.
Oxides	2,246,104	--	Poland 1,709,000; Cameroon 120,000; Portugal 93,324.
Metal, including alloys, all forms	4,656,950	599,562	Germany 1,484,625; France 626,937; Netherlands 403,125.
Mercury	872,034	1,000	Iran 170,582; Netherlands 148,351; Singapore 141,777.
Molybdenum:			
Ore and concentrate:			
Roasted	25,000	--	United Kingdom 24,000; Italy 1,000.
Unroasted	93	--	All to Argentina.
Metal, including alloys:			
Unwrought and scrap	68	--	Bulgaria 66; unspecified 2.
Semimanufactures	3,335	--	Germany 1,715; South Africa 496; France 445.
Unspecified	3,403	--	Do.

See footnotes at end of table.

TABLE 3--Continued
SPAIN: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
METALS--Continued			
Nickel:			
Ore and concentrate	331	93	Argentina 148; Czech Republic 58; Turkey 29.
Matte and speiss	12	--	Unspecified 12.
Oxides and hydroxides	value \$1,325	--	Portugal \$1,312; unspecified \$13.
Metal, including alloys:			
Scrap	433,599	44,863	Italy 237,394; Germany 76,492; Portugal 36,738.
Unwrought	123,643	2,250	Portugal 58,266; Brazil 48,000; Poland 14,000.
Semimanufactures	144,203	572	Cuba 50,355; Germany 41,823; Ireland 16,500.
Platinum-group metals:			
Waste and sweepings	7,697	--	France 4,916; Belgium 2,584; United Kingdom 197.
Metal, including alloys, unwrought and partly wrought:			
Palladium	value \$511,967	--	Portugal \$443,589; United Kingdom \$31,887; Italy \$30,139.
Platinum	value, thousands \$9,165	\$6	France \$7,293; United Kingdom \$1,845; Portugal \$17.
Rhodium	value \$13,255	--	Italy \$7,273; Portugal \$5,653; unspecified \$329.
Iridium, osmium, ruthenium	do. \$289	--	Unspecified \$289.
Rare-earth metals, including alloys, all forms	24	--	Unspecified 24.
Selenium, elemental	2,946	--	Portugal 2,000; Algeria 597; Canada 250.
Silicon, high-purity	122,495	--	Algeria 115,199; Portugal 6,812; Bulgaria 484.
Tin:			
Ore and concentrate	51,526	--	France 30,273; Malaysia 21,253.
Metal, including alloys:			
Scrap	197,779	--	Belgium 137,851; Portugal 44,554; United Kingdom 5,562.
Unwrought	152,544	--	Portugal 104,909; Argentina 33,570; Cuba 12,819.
Semimanufactures	86,982	2,370	United Kingdom 43,253; Argentina 20,781; Mexico 6,875.
Titanium:			
Ore and concentrate	488,508	--	Portugal 220,625; Morocco 158,000; Mexico 52,000.
Oxides	638,919	6,687	Portugal 269,312; Morocco 108,851; Belgium 102,246.
Metal, including alloys:			
Scrap and unwrought	1,837	--	Portugal 808; Italy 597; France 273.
Semimanufactures	671,234	5,812	Italy 330,875; Bahrain 153,898; France 79,148.
All forms	673,071	5,812	Italy 331,472; Bahrain 153,898; France 79,421.
Tungsten, metal, including alloys:			
Scrap and unwrought	80,400	1,761	Italy 30,042; Germany 22,320; Netherlands 9,875.
Semimanufactures	75,265	632	United Kingdom 69,284; Germany 1,847; Belgium 1,250.
All forms	155,665	2,393	United Kingdom 70,409; Italy 30,311; Germany 24,167.
Vanadium, oxides and hydroxides	9,785	--	Mexico 7,812; Andorra 1,375; Italy 546.
Zinc:			
Ore and concentrate	33,908,169	--	Belgium 13,793,738; France 11,643,660; Germany 6,093,324.
Oxides	12,364,233	--	France 3,161,437; Italy 2,593,500; Portugal 2,413,125.
Blue powder	848,812	--	Brazil 844,000; Portugal 4,812.
Ash and residue that contain zinc	299,002	--	Portugal 151,398; France 106,804; Israel 40,800.
Metal, including alloys:			
Scrap	3,521,235	--	India 1,991,750; China 849,187; Italy 329,812.
Unwrought	344,554,345	--	Italy 138,252,589; Germany 67,697,925; Netherlands 67,302,222.
Semimanufactures	1,414,918	--	Algeria 1,070,750; Portugal 239,358; Hungary 65,789.
Zirconium:			
Ore and concentrate	metric tons 14,568	--	United Arab Emirates 8,397; Portugal 1,641; Italy 967.
Metal, including alloys:			
Scrap and unwrought	9,000	--	All to Algeria.
Semimanufactures	641,450	--	Indonesia 454,812; Brazil 168,000; Venezuela 10,500.
All forms	650,450	--	Do.
Other, ashes and residues	3,819,563	109,733	Italy 1,930,125; Japan 446,147; Mexico 380,464.

See footnotes at end of table.

TABLE 3--Continued
SPAIN: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc.		4,069,681	--	Germany 1,199,187; China 1,010,437; Italy 863,819.
Artificial:				
Corundum		974,571	--	Italy 773,312; Portugal 107,843; Morocco 39,500.
Silicon carbide		4,479,157	137,000	Italy 853,250; United Kingdom 782,125; Portugal 623,000.
Dust and powder of precious and semiprecious stones, including diamond	value	\$2,154,983	--	Portugal \$1,315,235; Italy \$388,811; Germany \$346,176.
Grinding and polishing wheels and stones		6,656,418	59,136	Portugal 1,172,475; Germany 1,400,116; France 681,615.
Barite and witherite		36,961,867	--	Italy 13,908,753; Cameroon 5,860,250; France 5,400,550.
Boron materials:				
Crude natural borates		10,277,568	--	Republic of Korea 7,203,000; Brazil 1,500,250; India 924,000.
Oxides and acids		6,092,119	--	Italy 3,839,312; France 948,750; Germany 470,875.
Cement	metric tons	1,746,212	326,747	France 471,782; Portugal 235,855; United Kingdom 196,251.
Chalk		106,105,055	--	Germany 27,180,089; France 25,095,359; Morocco 14,770,386.
Clays, crude:				
Bentonite	metric tons	73,586	5	United Kingdom 24,265; Germany 15,780; Portugal 9,207.
Chamotte earth and Dinas earth		1,576,884	6,500	Morocco 695,812; Andorra 354,937; Tunisia 275,000.
Fire clay		2,293,965	--	Portugal 1,079,750; France 721,250; Germany 297,687.
Fuller's earth		12,764,704	--	Italy 5,408,425; Germany 3,238,750; Netherlands 1,790,750.
Kaolin		163,708,206	--	Italy 47,085,906; United Kingdom 26,700,218; France 25,383,730.
Diamond, natural:				
Gem, not set or strung	value, thousands	\$4,929	\$64	United Kingdom \$1,484; Belgium \$1,384; Austria \$571.
Industrial stones	value	\$458,113	\$26,330	Belgium \$197,799; Italy \$176,065; Poland \$26,469.
Dust and powder	do.	\$2,154,983	--	Portugal \$1,315,235; Italy \$388,811; Germany \$346,176.
Diatomite and other infusorial earth		5,654,927	127,554	Italy 2,427,625; Portugal 1,128,062; France 741,937.
Feldspar		65,636,723	--	Portugal 42,396,378; Morocco 8,487,750; Italy 7,447,554.
Fertilizer materials:				
Crude, n.e.s.		22,896,078	--	Portugal 6,469,300; France 5,969,234; Italy 5,953,496.
Manufactured:				
Ammonia		32,069,207	--	Morocco 18,397,448; France 8,061,992; Portugal 5,592,792.
Nitrogenous		598,796,646	43,268,359	Ireland 138,213,375; Portugal 76,730,771; France 70,838,636.
Phosphatic		573,529	--	Portugal 286,362; Italy 194,703; Morocco 50,519.
Potassic	metric tons	521,680	--	France 268,863; Netherlands 61,368; Morocco 55,332.
Unspecified and mixed	value	\$210,362,755	\$5,725,519	France \$60,020,106; Portugal \$30,367,309; Ireland \$18,220,421.
Fluorspar		1,745,562	--	All to Portugal.
Graphite, natural		167,284	--	Italy 40,000; Sweden 24,500; Germany 23,698.
Gypsum and plaster	metric tons	3,335,900	671,282	United Kingdom 885,150; Portugal 364,491; France 247,166.
Iodine		28,940	--	Portugal 20,503; Lithuania 2,125; Peru 2,062.
Kyanite and related materials:				
Andalusite, kyanite, sillimanite		6,375	--	All to Italy.
Mullite		52,296	--	France 46,398; India 3,125; Portugal 2,125.
Unspecified		58,671	--	France 46,398; Italy 6,375; India 3,125.
Lime		99,701,250	--	France 79,853,812; Portugal 7,853,812; Nigeria 1,970,062.
Magnesium compounds:				
Magnesite, crude		23,432,426	--	Canada 20,999,558; France 1,797,000; Switzerland 344,437.
Oxides and hydroxides	metric tons	160,313	--	France 56,063; United Kingdom 38,168; Portugal 13,496.
Other		138,523	--	Portugal 135,148; Algeria 3,375.
Mica:				
Crude, including splittings and waste		3,955,961	101	United Kingdom 1,854,875; France 1,599,937; Italy 316,394.
Worked, including agglomerated splittings		45,213	--	Morocco 21,000; Peru 6,328; Portugal 4,187.
Nitrates, crude		75,965	--	Morocco 42,000; Mauritius 20,000; Portugal 11,000.
Phosphates, crude		12,235	--	Cuba 6,312; Portugal 3,875; unspecified 2,042.
Phosphorus, elemental		2	--	Unspecified 2.

See footnotes at end of table.

TABLE 3--Continued
SPAIN: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Pigments, mineral, iron oxides and hydroxides, processed		15,102,259	596,937	Italy 3,448,773; Portugal 1,910,999; France 1,161,722.
Precious and semiprecious stones other than diamond:				
Natural	value	\$1,158,316	\$189,806	Colombia \$148,024; United Kingdom \$127,320; India \$124,532.
Synthetic	do.	\$2,394,221	--	Morocco \$727,655; Germany \$543,997; Portugal \$315,871.
Pyrite, unroasted		15,535	136	China 5,375; Argentina 4,000; Morocco 3,500.
Quatrz crystal, piezoelectric	value	\$710	--	Unspecified \$710.
Salt and brine		645,615,144	590,687	France 268,794,250; Norway 90,277,000; Portugal 81,836,125.
Sodium compounds, n.e.s., sulfate, natural and/or manufactured	metric tons	699,963	--	Italy 147,466; Brazil 107,635; United Kingdom 71,412.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	do.	1,501,891	46,648	United Kingdom 366,110; China 211,496; Italy 151,269.
Worked	do.	1,166,075	124,236	France 338,037; Germany 159,463; United Kingdom 148,691.
Dolomite, chiefly refractory-grade	do.	220,542	332	United Kingdom 107,900; France 39,122; Germany 26,320.
Gravel and crushed rock		794,632,668	338,937	Andorra 321,648,486; Portugal 303,151,038; France 99,544,312.
Limestone other than dimension		124,820,062	--	Belgium 124,072,562; Indonesia 537,500; China 210,000.
Quartz and quartzite		264,511,080	--	Norway 247,832,500; Iceland 8,958,000; France 2,778,875.
Sand other than metal-bearing	metric tons	1,856,459	374	Portugal 903,324; Andorra 642,598; Italy 229,941.
Sand and gravel	do.	2,651,092	713	Portugal 1,206,475; Andorra 964,247; Italy 230,148.
Sulfur:				
Elemental:				
Crude, including native and byproduct		37,396,664	--	France 8,208,054; Netherlands 6,488,179; Benin 6,013,460.
Colloidal, precipitated, sublimed		529,043	--	France 348,750; Morocco 144,621; Germany 14,375.
Sulfur dioxide		892,249	--	Portugal 816,687; Belgium 60,375; United Arab Emirates 15,187.
Sulfuric acid		398,272,637	70,460,937	Portugal 102,040,312; Morocco 86,401,125; Brazil 60,152,414.
Talc, steatite, soapstone, pyrophyllite	metric tons	69,771	5	Belgium 34,170; Portugal 12,377; United Kingdom 6,453.
Vermiculite, perlite, chlorite		905,995	--	Turkey 276,187; France 174,800; Italy 121,500.
Other:				
Crude		989,110,289	1,950,937	Belgium 278,321,312; France 169,319,112; Italy 160,410,937.
Slag and dross, not metal-bearing		352,300,633	66,560,000	Portugal 251,944,347; Cuba 10,156,890; France 8,552,378.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural		17,633,704	--	Portugal 13,060,746; Andorra 4,335,320; Morocco 199,839.
Carbon black		24,951,932	875,187	France 8,590,925; Portugal 4,773,246; Italy 2,704,187.
Coal:				
Anthracite		46,187,695	--	Portugal 15,764,917; Greece 13,298,019; France 9,844,367.
Bituminous	metric tons	8,220	--	United Kingdom 6,355; Germany 1,127; Portugal 735.
Briquets of anthracite and bituminous coal		6,125	--	All to Portugal.
Lignite, including briquets		14,562	--	Morocco 11,500; Netherlands 3,062.
All grades, including briquets		54,427,986	--	Portugal 16,505,979; Greece 13,298,019; France 9,844,367.
Coke and semicoke		921,660,556	--	Germany 347,630,250; Brazil 205,935,500; Belgium 205,935,500.
Gas, manufactured		300	--	All to Portugal.
Gas, natural:				
Gaseous	metric tons	2,776,147	--	Do.
Liquefied		120,794,062	--	Do.
Peat, including briquets and litter		6,074,020	--	Portugal 4,061,500; France 1,171,000; Netherlands 538,187.
Petroleum refinery products:				
Liquefied petroleum gas		170,189,296	6,864,542	Morocco 64,053,097; Portugal 55,454,585; France 21,058,026.
Mineral jelly and wax		40,198,637	1,218,000	Portugal 13,017,574; Italy 4,765,925; France 2,997,499.
Asphalt		811,725,356	76,966,687	France 280,965,937; Portugal 233,535,250; Algeria 72,605,937.
Bitumen and other residues		811,763,495	76,966,687	France 280,965,937; Portugal 233,569,406; Algeria 72,605,937.
Bituminous mixtures		30,319,255	--	Portugal 27,830,144; Gibraltar 1,530,812; France 372,875.
Petroleum coke		134,694,886	--	Netherlands 44,810,601; Portugal 33,717,183; Greece 19,806,710.

See footnotes at end of table.

TABLE 3--Continued
 SPAIN: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
MINERAL FUELS AND RELATED MATERIALS--Continued			
Uranium:			
Ore and concentrate	168,000	--	All to Cuba.
Oxides and other compounds	156,558	1,222	France 130,000; Portugal 22,789; Belgium 1,943.
Metal, including alloys, all forms:			
Uranium	4	--	Unspecified 4.
Thorium	120,900	6	France 95,760; Portugal 22,789; Belgium 1,943.

-- Zero.

¹Source: United Nations Statistics Division, Commodity Trade Statistics Database (COMTRADE), accessed February 2006, at URL <http://unstats.un.org/unsd/comtrade/dqBasicQueryResults>.

TABLE 4
SPAIN: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
METALS				
Alkali and alkaline-earth metals:				
Alkali metals		82,614	20	China 54,000; United Kingdom 7,687; France 7,136.
Alkaline-earth metals		451,227	--	Germany 153,003; Russia 132,871; China 72,000.
Unspecified		533,841	20	Germany 159,263; Russia 132,871; China 126,000.
Aluminum:				
Ore and concentrate	metric tons	2,844,037	(2)	Guinea 2,750,597; Greece 39,013; China 37,417.
Oxides and hydroxides		65,765,084	223,902	France 26,372,870; Germany 24,775,921; Hungary 5,040,671.
Ash and residue containing aluminum	metric tons	53,970	10	France 29,092; Germany 8,331; United Kingdom 5,376.
Metal including alloys:				
Scrap		68,931,299	104,445	France 39,944,625; Portugal 9,936,480; Cuba 4,796,660.
Unwrought	metric tons	295,013	--	Portugal 70,658; Mozambique 53,588; Norway 39,723.
Semimanufactures	do.	249,543	10,027	Italy 59,813; United Kingdom 36,813; France 32,821.
Antimony:				
Ore and concentrate		159,107	--	Italy 106,867; China 41,238; United Kingdom 11,000.
Oxides		524,428	24,101	Belgium 197,964; China 143,000; France 123,800.
Metal including alloys, all forms		1,599,480	--	China 1,160,312; Russia 230,144; United Kingdom 63,000.
Arsenic, metal including alloys, all forms		99,389	--	China 88,296; United Kingdom 10,000; Belgium 1,000.
Beryllium, metal including alloys, all forms		308	--	All from France.
Bismuth, metal including alloys, all forms		180,431	--	Belgium 127,660; United Kingdom 27,050; Netherlands 16,156.
Cadmium, metal including alloys, all forms		28,119	--	Mexico 20,000; Italy 5,000; France 3,000.
Chromium:				
Ore and concentrate		5,894,277	--	South Africa 3,698,750; Pakistan 1,025,625; France 956,625.
Oxides and hydroxides		9,426,329	75,523	United Kingdom 3,116,625; China 2,309,250; Russia 1,620,500.
Metal including alloys, all forms		920,881	482	Portugal 465,812; Russia 211,101; Japan 92,980.
Cobalt:				
Ore and concentrate		9,625	--	United Kingdom 6,000; Germany 3,625.
Oxides and hydroxides		1,387,347	12,750	Finland 531,875; United Kingdom 397,125; Belgium 318,625.
Metal including alloys, all forms		169,808	4,624	Belgium 52,613; France 27,946; Canada 23,000.
Columbium and tantalum, metal including all forms, tantalum				
		1,927	1,312	Germany 421; France 132; United Kingdom 48.
Copper:				
Ore and concentrate	metric tons	1,096,654	--	Indonesia 727,255; Chile 137,269; Portugal 115,925.
Matte and speiss including cement copper		40,245	--	Italy 27,308; France 12,937.
Oxides and hydroxides		906,954	114,136	United Kingdom 217,601; Peru 142,093; Germany 63,597.
Sulfate		4,447,596	757	Italy 1,839,687; France 859,250; Russia 364,312.
Ash and residue containing copper		15,556,543	2,019,187	Italy 7,845,523; Belgium 1,891,375; United Kingdom 1,266,625.
Metal including alloys:				
Scrap	metric tons	58,379	1,442	France 19,494; Portugal 10,726; United Kingdom 7,434.
Unwrought		51,580,195	692,313	Chile 39,810,592; France 2,615,966; Germany 2,017,851.
Semimanufactures		218,514,611	1,607,019	Italy 61,627,916; France 55,924,629; Germany 46,938,847.
Germanium, metal including alloys, all forms	value	\$29,896	\$2,651	Belgium \$16,960; United Kingdom \$10,285.
Gold:				
Waste and sweepings		1,255	8	Portugal 699; Germany 548.
Metal including alloys, unwrought and partly wrought	value, millions	\$497	\$7	Switzerland \$232; United Kingdom \$109; Russia \$64.
Iron and steel:				
Iron ore and concentrate:				
Including roasted pyrite	metric tons	6,052,861	5	Brazil 4,215,803; Venezuela 687,301; Australia 600,306.
Excluding roasted pyrite	do.	6,052,801	(2)	Do.
Roasted pyrite		59,979	5,312	Italy 54,000; Peru 667.
Metal:				
Scrap	metric tons	6,395,563	98,783	United Kingdom 2,336,441; France 1,329,529; Russia 590,106.
Pig iron, cast iron, related materials	do.	1,036,960	--	Russia 491,355; Brazil 215,483; Venezuela 130,830.

See footnotes at end of table.

TABLE 4--Continued
SPAIN: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
METALS--Continued				
Iron and steel--Continued:				
Metal--Continued:				
Ferroalloys:				
Ferrochromium	metric tons	578,714	--	Russia 354,673; South Africa 136,733; Kazakhstan 45,908.
Ferromanganese		29,399,970	--	France 11,770,371; South Africa 7,018,457; Belgium 6,835,089.
Ferromolybdenum		4,094,211	--	United Kingdom 1,893,062; Chile 444,000; Austria 347,312.
Ferronickel	metric tons	57,501	(2)	New Caledonia 19,783; Greece 16,854; Colombia 13,795.
Ferrosilicon		54,357,699	18,906	Norway 15,259,449; Romania 9,992,652; South Africa 9,421,417.
Ferrotitanium and ferrosilicotitanium		992,673	--	United Kingdom 589,625; Germany 150,917; France 138,351.
Ferrotungsten and ferrosilicotungsten		100,483	--	Netherlands 45,593; China 39,988; Luxembourg 10,000.
Ferrovandium		867,049	--	Luxembourg 200,160; United Kingdom 170,593; Austria 169,250.
Ferroniobium		309,354	--	Brazil 135,398; Germany 76,000; Netherlands 72,449.
Silicon metal		3,261,408	--	France 1,139,687; China 1,134,000; India 300,000.
Unspecified	metric tons	795,019	27	Russia 356,608; South Africa 156,854; Kazakhstan 64,894.
Steel, primary forms	do.	1,497,292	20,485	France 608,006; Brazil 184,283; Turkey 161,498.
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	do.	3,916,230	141,319	France 645,591; Italy 523,141; Germany 377,343.
Clad, plated, coated	do.	2,661,228	6,203	United Kingdom 752,673; Germany 486,887; France 413,314.
Of alloy steel	do.	1,682,803	667	France 1,268,389; Germany 155,846; Russia 45,634.
Bars, rods, angles, shapes, sections	do.	2,214,999	12,499	Portugal 512,668; Turkey 374,069; Italy 250,514.
Rails and accessories		32,238,178	20,238	France 9,431,304; Germany 6,866,936; Poland 4,558,339.
Wire		144,136,345	68,247	Portugal 48,827,501; Italy 22,623,293; France 16,408,865.
Tubes, pipes, fittings		723,538,693	1,937,651	Germany 146,626,421; Italy 132,516,595; France 96,363,186.
Lead:				
Ore and concentrate		328,750	--	Morocco 327,125; Czech Republic 1,625.
Oxides		5,617,102	4,937	Portugal 3,528,562; Italy 980,249; Belgium 894,909.
Ash and residue containing lead		2,500	--	Unspecified 2,500.
Metal including alloys:				
Scrap		21,961,263	--	Portugal 9,576,902; France 8,652,500; Nigeria 2,439,562.
Unwrought		126,236,031	1,711,875	Morocco 32,464,914; Peru 29,036,984; Kazakhstan 25,521,972.
Semimanufactures		4,198,132	4,000	France 1,497,045; Netherlands 1,086,625; Ireland 741,562.
Lithium, oxides and hydroxides		438,311	49,507	China 190,000; Germany 102,414; Belgium 57,050.
Magnesium, metal including alloys:				
Scrap		4,625	--	All from France.
Unwrought		1,362,656	--	Netherlands 412,312; Germany 250,800; Russia 242,015.
Semimanufactures		4,504,682	164	Norway 3,906,062; Israel 230,402; Germany 121,269.
Unspecified		5,871,963	164	Norway 3,972,069; Germany 461,302; Netherlands 412,312.
Manganese:				
Ore and concentrate		412,242,873	--	South Africa 192,762,375; Gabon 88,344,937; Ghana 53,593,109.
Oxides		3,061,969	--	South Africa 807,000; India 568,500; Germany 486,765.
Metal including alloys, all forms		10,199,193	--	China 6,085,972; South Africa 3,012,000; Mexico 414,000.
Mercury		324,974	--	Germany 180,941; Peru 114,195; Belgium 13,937.
Molybdenum:				
Ore and concentrate:				
Roasted		3,927,045	59,441	Chile 1,733,250; Netherlands 1,022,562; Mexico 618,437.
Unroasted		6,002	--	United Kingdom 4,000; Italy 2,000; unspecified 2.
Oxides and hydroxides		58,028	--	United Kingdom 39,679; France 17,738; Italy 500.
Metal including alloys:				
Unwrought and scrap		12,789	8,000	Germany 3,892; France 730; Netherlands 156.
Semimanufactures		33,115	1,250	China 15,000; Germany 7,717; Austria 1,562.
Unspecified		45,904	9,250	China 15,000; Germany 11,609; Austria 3,204.

See footnotes at end of table.

TABLE 4--Continued
SPAIN: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
METALS--Continued				
Nickel:				
Ore and concentrate		2,993	--	Italy 2,250; Germany 722; unspecified 21.
Matte and speiss		12,626	--	Canada 9,000; Belgium 3,625; unspecified 1.
Oxides and hydroxides		219,473	--	Cuba 100,601; Japan 66,726; Netherlands 34,750.
Metal including alloys:				
Scrap		186,675	--	France 81,253; Portugal 62,925; Germany 25,218.
Unwrought		27,781,304	173,585	Russia 10,092,769; Australia 6,394,160; Netherlands 5,348,156.
Semimanufactures		1,262,914	133,430	Germany 362,692; France 271,625; Italy 161,251.
Platinum-group metals:				
Waste and sweepings		40	--	France 32; Switzerland 5; Portugal 3.
Metal including alloys, unwrought and partly wrought:				
Palladium	value	\$6,387,670	\$1,348,065	Switzerland \$3,010,852; France \$1,281,681; Germany \$421,337.
Platinum	value, thousands	\$24,474	\$29	France \$9,894; Switzerland \$5,544; United Kingdom \$5,067.
Rhodium	value	\$712,713	--	France \$456,545; Italy \$164,187; United Kingdom \$80,857.
Iridium, osmium, ruthenium	do.	\$141,861	\$819	Italy \$85,587; United Kingdom \$47,010; Germany \$7,362.
Rare-earth metals including alloys, all forms		88,260	11	China 70,000; United Kingdom 11,000; Estonia 6,000.
Selenium, elemental		77,244	--	United Kingdom 42,250; France 22,304; Belgium 5,000.
Silicon, high-purity		131,030	14	Brazil 25,000; France 25,000; Russia 20,101.
Silver, metal including alloys, unwrought and partly wrought		61,090	--	Indonesia 45,084; Romania 5,110; Chile 5,078.
Tin:				
Ore and concentrate		106,140	--	United Kingdom 105,992; Brazil 148.
Metal including alloys:				
Scrap		2,623,710	64,687	Portugal 2,454,625; Netherlands 68,070; France 36,328.
Unwrought		8,039,642	3,562	Peru 2,332,375; Indonesia 2,055,062; Bolivia 1,325,937.
Semimanufactures		579,597	3,562	France 214,019; Germany 194,465; Italy 94,686.
Titanium:				
Ore and concentrate		105,134,272	523	Australia 102,685,375; Ukraine 682,000; China 482,000.
Oxides		14,801,277	2,431,187	China 4,785,730; Germany 2,527,312; Netherlands 2,218,125.
Metal including alloys:				
Scrap and unwrought		651,145	433	Russia 240,632; Germany 192,503; Ukraine 187,230.
Semimanufactures		2,387,456	380,382	Belgium 968,125; Germany 402,112; Russia 194,855.
All forms		3,038,601	380,815	Belgium 968,125; Germany 594,615; Russia 435,487.
Tungsten:				
Ore and concentrate		917	105	France 500; China 250; unspecified Asia 62.
Metal including alloys:				
Scrap and unwrought		32,693	4,323	France 22,070; Germany 3,722; Austria 1,250.
Semimanufactures		145,512	15,772	Portugal 85,741; Italy 24,037; United Kingdom 9,687.
All forms		178,205	20,095	Portugal 85,741; Italy 24,054; France 22,333.
Vanadium:				
Oxides and hydroxides		47,545	32,296	Germany 5,812; Netherlands 4,000; Austria 3,000.
Metal including alloys, all forms		11,425	--	Germany 6,000; Republic of Korea 5,000; Netherlands 398.
Zinc:				
Ore and concentrate	metric tons	1,077,632	195,958	Ireland 279,400; Peru 263,926; Canada 142,910.
Oxides		30,273,723	36,468	Italy 8,470,644; Netherlands 8,364,828; Portugal 5,400,218.
Blue powder		1,752,527	--	Belgium 1,096,250; Denmark 341,687; Ireland 119,816.
Ash and residue containing zinc		7,401,343	--	Germany 2,795,375; Portugal 1,905,687; France 1,531,644.
Metal including alloys:				
Scrap		3,948,163	--	France 1,984,125; Australia 564,312; Algeria 308,187.
Unwrought	metric tons	20,352	37	Belgium 11,548; Netherlands 3,575; United Kingdom 1,886.
Semimanufactures		7,217,333	24,545	Germany 3,029,971; France 2,833,112; Peru 625,222.

See footnotes at end of table.

TABLE 4--Continued
SPAIN: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
METALS--Continued				
Zirconium:				
Ore and concentrate	metric tons	145,737	9	South Africa 100,266; Australia 42,733; Ukraine 1,564.
Metal including alloys:				
Scrap and unwrought		425	410	Netherlands 3; unspecified 12.
Semimanufactures		34,731	18,312	Israel 6,375; Canada 5,375; Germany 4,562.
All forms		35,156	18,722	Do.
Other, ashes and residues		77,055,626	2,029,563	France 30,865,545; Italy 12,872,048; Germany 11,126,324.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc.		5,829,807	16,854	India 2,009,562; Australia 1,397,875; Turkey 695,000.
Artificial:				
Corundum		17,419,840	--	France 4,723,082; China 4,412,394; Germany 2,841,500
Silicon carbide		5,832,124	9	Germany 1,349,625; Netherlands 812,187; Venezuela 772,000.
Dust and powder of precious and semiprecious stones including diamond	value	\$21,483,355	\$398,556	Ireland \$13,579,013; Belgium \$6,292,846; Italy \$385,438.
Grinding and polishing wheels and stones		9,987,015	15,522	Italy 3,189,498; Germany 1,989,432; France 1,091,748.
Asbestos, crude		130,351	--	Unspecified 130,351.
Barite and witherite		48,468,852	--	Morocco 33,751,023; China 12,236,331; Germany 838,500.
Boron materials:				
Crude natural borates		62,413,103	--	Turkey 58,780,000; Argentina 3,440,437; Belgium 118,000.
Oxides and acids		34,990,052	25,279,675	Chile 4,039,500; Turkey 3,353,250; France 567,250.
Cement	metric tons	8,549,552	--	Turkey 2,151,787; Egypt 1,678,511; Portugal 1,009,616.
Chalk		8,928,229	--	France 3,729,000; Portugal 1,629,000; Switzerland 1,615,875.
Clays, crude:				
Bentonite		69,656,100	46,128	Greece 32,032,558; Italy 23,655,000; Germany 6,339,078.
Chamotte earth and Dinas earth		42,466,126	10,670,554	Ukraine 22,000,000; France 5,103,964; Germany 4,477,132.
Fire clay		78,136,039	--	Ukraine 70,943,000; Portugal 3,077,062; France 2,895,750.
Fuller's earth		366,774	--	Malaysia 270,000; Turkey 96,000; unspecified 521.
Kaolin	metric tons	1,006,163	11,533	Ukraine 439,084; United Kingdom 303,550; Turkey 105,419.
Diamond, natural:				
Gem, not set or strung	value	\$49,787,369	\$92,727	Belgium \$35,204,586; India \$7,032,970; Israel \$2,863,770.
Industrial stones	do.	\$3,225,365	--	Belgium \$2,159,988; Ireland \$252,040; France \$193,274.
Dust and powder	do.	\$21,440,702	\$359,605	Ireland \$13,579,013; Belgium \$6,292,846; Italy \$385,438.
Diatomite and other infusorial earth		10,413,831	2,804,375	Cuba 3,058,000; France 2,953,125; Ireland 1,198,250.
Feldspar		777,159,646	--	Turkey 558, 200,687; Italy 128,397,437; France 88,491,875.
Fertilizer materials:				
Crude, n.e.s.		23,185,814	137,351	Netherlands 6,101,777; Italy 5,473,191; Germany 4,396,695.
Manufactured:				
Ammonia	metric tons	551,627	(2)	Ukraine 163,049; Algeria 157,829; Netherlands 82,309.
Nitrogenous	do.	1,447,354	20	Russia 221,392; Romania 164,876; Portugal 153,589.
Phosphatic	do.	112,074	(2)	Tunisia 35,185; Portugal 30,998; Netherlands 16,929.
Potassic		316,048,248	20,476	Jordan 91,029,500; Israel 80,709,351; Canada 38,498,839.
Unspecified and mixed	value, thousands	\$511,702	\$1,798	Germany \$51,321; Russia \$45,734; Portugal \$44,090.
Fluorspar		9,277,925	--	China 4,455,859; Netherlands 2,625,625; Mexico 2,095,500.
Graphite, natural		11,159,461	50,648	Spain 5,317,112; Germany 1,890,875; China 1,469,000.
Gypsum and plaster		206,879,029	100,508	Portugal 125,400,937; Morocco 69,121,625; France 10,200,577.
Iodine		799,334	392,000	Portugal 286,187; Japan 58,281; Chile 38,398.
Kyanite and related materials:				
Andalusite, kyanite, sillimanite		11,422,956	461,500	South Africa 8,598,769; France 2,140,250; Germany 106,984.
Mullite		1,036,503	28,941	Germany 698,875; China 271,812; Hungary 23,000.
Unspecified		12,459,459	490,441	South Africa 8,598,769; France 2,140,250; Germany 805,859.
Lime		6,341,450	--	Portugal 4,752,468; Belgium 968,000; Germany 462,030.

See footnotes at end of table.

TABLE 4--Continued
SPAIN: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Magnesium compounds:				
Magnesite, crude		3,552,263	1,875	Italy 1,569,625; Netherlands 1,501,062; Turkey 364,625.
Oxides and hydroxides	metric tons	366,595	303	Germany 280,484; China 30,548; Netherlands 20,364.
Other		1,493,250	--	Germany 847,250; India 598,000; Belgium 48,000.
Mica:				
Crude including splittings and waste		1,799,361	50,425	France 679,811; India 262,375; Italy 223,648.
Worked including agglomerated splittings		277,809	--	Belgium 116,351; China 60,953; Austria 36,906.
Nitrates, crude		11,697,860	--	Chile 10,702,000; Germany 547,250; Portugal 281,687.
Phosphates, crude	metric tons	1,719,985	--	Morocco 1,532,124; Syria 87,375; Algeria 39,668.
Phosphorus, elemental		56,817	20,003	China 18,000; Sweden 15,812; Italy 3,000.
Pigments, mineral, iron oxides and hydroxides, processed		28,807,782	24,555	China 14,410,128; Germany 7,632,558; France 2,146,250.
Potassium salts, crude		5,000	--	All from China.
Precious and semiprecious stones other than diamond:				
Natural	value, thousands	\$9,472	\$258	Thailand \$1,758; Hong Kong, China \$1,295; India \$1,163.
Synthetic	value	\$5,544,035	\$50,381	Switzerland \$3,154,506; China \$750,531; Germany \$341,327.
Pyrite, unroasted		667,034	--	Brazil 471,000; Belgium 120,000; Italy 64,000.
Quartz crystal, piezoelectric	value	\$1,366,576	\$17,634	Japan \$1,099,027; Italy \$212,840; France \$15,382.
Salt and brine		51,488,882	47,218	Tunisia 23,851,000; Algeria 14,957,839; France 8,384,125.
Sodium compounds, n.e.s., sulfate, natural and/or manufactured		859,678	24	Germany 549,937; France 306,500; United Kingdom 2,000.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	metric tons	1,246,012	440	Portugal 280,366; Brazil 134,045; India 111,142.
Worked		203,361,904	95,112	Italy 60,273,637; Portugal 34,433,326; China 22,409,364.
Dolomite, chiefly refractory-grade		3,137,434	--	Italy 846,687; Norway 645,250; Germany 571,875.
Gravel and crushed rock		314,507,228	105,573	Morocco 202,106,000; France 59,851,197; Portugal 34,979,409.
Limestone other than dimension		18,176	18,144	Unspecified 32.
Quartz and quartzite		24,199,161	8	Brazil 11,576,449; India 7,501,374; Germany 1,554,876.
Sand other than metal-bearing	metric tons	1,199,676	108	Morocco 896,994; Portugal 94,483; France 89,371.
Sand and gravel	do.	1,514,184	213	Morocco 1,099,100; France 149,222; Portugal 129,462.
Sulfur:				
Elemental:				
Crude including native and byproduct	do.	203,027	1	France 102,548; Germany 44,721; Saudi Arabia 21,000.
Colloidal, precipitated, sublimed		966,217	--	Algeria 700,000; France 234,027; Canada 20,000.
Sulfur dioxide		5,527,642	--	Germany 3,948,812; Sweden 1,090,187; Italy 472,562.
Sulfuric acid		168,835,704	218	Italy 77,024,812; France 30,402,851; Germany 24,737,597.
Talc, steatite, soapstone, pyrophyllite		70,068,510	140,152	France 37,253,163; China 11,571,777; Italy 9,336,742.
Vermiculite, perlite, chlorite		149,986,075	37,800	Greece 110,115,375; Turkey 28,380,000; South Africa 4,601,000.
Other:				
Crude	metric tons	1,234,644	1,708	Andorra 1,039,332; Greece 110,115; Turkey 28,382.
Slag and dross, not metal-bearing		347,806,681	93,125	Italy 157,978,983; France 58,609,466; Turkey 41,358,281.
MINERAL FUELS AND RELATED MATERIALS				
Asphalt and bitumen, natural		321,614	271,062	United Kingdom 15,000; Portugal 13,187; Italy 11,000.
Carbon black	metric tons	179,446	670	United Kingdom 56,534; France 28,627; Portugal 23,888.
Coal:				
Anthracite	do.	2,043,995	--	Australia 770,717; South Africa 738,678; Russia 266,190.
Bituminous	do.	10,506,052	1,223,574	South Africa 3,097,385; Australia 2,658,437; Russia 1,569,085.
Briquets of anthracite and bituminous coal		124,449	--	United Kingdom 122,386; Germany 2,062; unspecified 1.
Lignite including briquets		289,346	--	Germany 161,839; Netherlands 121,507; Belgium 6,000.
All grades including briquets	metric tons	20,879,857	1,611,031	South Africa 8,293,807; Australia 3,589,096; Indonesia 3,228,944.
Coke and semicoke		220,411,201	57,688,265	Russia 81,373,250; China 45,505,785; Poland 11,496,281.
Gas, manufactured		3	3	None.

See footnotes at end of table.

TABLE 4--Continued
SPAIN: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003¹

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
MINERAL FUELS AND RELATED MATERIALS--Continued			
Gas, natural:			
Gaseous	metric tons	5,145,202	(2) Algeria 3,794,936; Norway 1,350,266; Netherlands (2).
Liquefied	do.	12,163,929	-- Algeria 6,059,027; Nigeria 3,505,991; Qatar 1,289,281.
Peat including briquets and litter		211,789,581	97,964 Germany 111,189,562; Estonia 38,311,433; Latvia 16,628,031.
Petroleum:			
Crude	metric tons	57,393,762	-- Russia 8,505,785; Libya 7,804,937; Saudi Arabia 6,909,676.
Refinery products:			
Liquefied petroleum gas	do.	1,245,986	6,813 Algeria 709,569; United Kingdom 258,352; France 64,594.
Mineral jelly and wax		48,704,728	418,909 China 14,063,550; France 11,238,830; Portugal 7,720,772.
Asphalt		370,277,790	-- Portugal 129,658,812; Italy 100,319,437; France 87,488,125.
Bitumen and other residues		435,382,383	114,019 Portugal 129,658,812; France 120,569,898; Italy 100,319,437.
Bituminous mixtures		2,229,075	-- Portugal 904,312; France 826,000; Germany 287,500.
Petroleum coke	metric tons	4,166,718	2,944,286 Venezuela 957,221; United Kingdom 145,843; Aruba 56,124.
Uranium:			
Ore and concentrate		12,114	6 Belgium 10,438; Germany 1,670.
Oxides and other compounds		344,045	-- United Kingdom 155,106; Portugal 85,610; Germany 71,280.
Metal including alloys, all forms:			
Uranium		12	-- Switzerland 9; unspecified 3.
Thorium		188,939	-- Portugal 85,610; Germany 71,280; France 31,887.

-- Zero.

¹Source: United Nations Statistics Division, Commodity Trade Statistics Database (COMTRADE), accessed February 2006, at URL <http://unstats.un.org/unsd/comtrade/dqBasicQueryResults>.

²Less than 1/2 unit.